

Amendments to the Claims

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Currently Amended) A device of Claim 4 51 further comprising at least one second reagent well in liquid communication through a hydrophilic capillary passageway with said first reagent well.

6. (Previously Presented) A device of Claim 5 further comprising at least one third reagent well in liquid communication through a hydrophilic capillary passageway with at least one of said second reagent wells of Claim 5.

7. (Currently Amended) A device of Claim 4 51 wherein said first reagent well contains a reagent adapted to react with a component contained in said uniform liquid sample.

8. (Original) A device of Claim 7 wherein said first reagent well contains a reagent adapted to react with a component contained in said uniform liquid sample and thereby produce a response indicating the amount of said component in said liquid sample.

9. (Original) A device of Claim 7 wherein said first reagent well contains a reagent adapted to react with a component contained in said uniform liquid sample and thereby reduce interference of said component with a second component to be detected.

10. (Original) A device of Claim 7 wherein said first reagent well contains a reagent adapted to pretreat said liquid sample.

11. (Original) A device of Claim 8 wherein said first reagent well contains a reagent adapted to react with a component in said liquid sample and thereby produce a reacted component.

12. (Original) A device of Claim 11 wherein said reacted component is further reacted in a second reagent well to produce a response indicating the amount of said component in said liquid sample.

13. (Currently Amended) A device of Claim 4 51 wherein the walls of said hydrophilic capillary passageway of (b) have a hydrophilic surface adjusted to provide substantially complete removal of said liquid sample.

14. (Canceled)

15. (Canceled)

16. (Currently Amended) A device of Claim 4 51 further comprising electrodes disposed in said first reagent well for measuring properties of said sample fluid.

17. (Original) A device of Claim 5 further comprising electrodes disposed in at least one of said second reagent wells for measuring properties of said sample fluid.

18. (Original) A device of Claim 6 further comprising electrodes disposed in at least one of said third reagent wells for measuring properties of said sample fluid.

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Withdrawn) A multi-purpose device for analyzing a biological fluid sample comprising:

(a) at least one sample well for receiving said sample;

(b) a capillary passageway communicating with at least one of said sample wells of (a) for receiving said sample from said sample well by capillary action, said passageway including a segment defining a uniform volume of said sample fluid, said segment being disposed between two intersecting passageways vented to the atmosphere, said segment communicating through a transfer capillary passageway to a first reagent well for transferring said uniform sample from said segment to said first reagent well;

(c) a capillary stop disposed within said transfer passageway for preventing transfer of said uniform sample to said first reagent well;

(d) optionally at least one second reagent well in fluid communication through a capillary passageway with said first reagent well;

(e) optionally at least one third reagent well in fluid communication through a capillary passageway with at least one of said second reagent wells.

(f) optionally at least one additional well for receiving portions of said sample of (a);

(g) sufficient vent channels for venting to atmosphere the reagent wells of (b), (d), (e) and (f) and wherein said reagent wells of (b), (d) and (e), said vent channels, and said capillary step of (c) are positioned on a flat disc so that capillary passageways may be formed in said disc

connecting said wells to each other and to said vent channels as needed for analyzing said biological fluid sample.

27. (Withdrawn) A multi-purpose device of Claim 26, wherein said sample well of (a) is in fluid communication with one of said additional wells of (f) and said additional well of (f) is in venting communication with one of said vent channels of (g) and in fluid communication with at least one of said reagent wells of (b), (d) and (e) said at least one reagent well of (b), (d) and (e) being in venting communication with one of said vent channels of (g).

28. (Withdrawn) A multi-purpose device of Claim 26, wherein at least one of said second reagent wells of (d) is in fluid communication with said first reagent well of (b) and said at least one of said reagent wells of (d) is in venting communication with a second of said venting channels of (g).

29. (Withdrawn) A multi-purpose device of claim 28, wherein said at least one of said second reagent wells of (d) is in fluid communication with at least one of said reagent wells of (e) and said third additional well of (e) is in venting communication with a venting channel of (g).

30. (Withdrawn) A multi-purpose device of Claim 26, wherein one or more of said reagent wells of (b), (e) and (f) contain reagents for treating said sample.

31. (Withdrawn) A multi-purpose device of Claim 26, wherein said capillary stop is a hydrophilic stop.

32. (Withdrawn) A multi-purpose device of Claim 26, wherein said capillary stop is a hydrophobic stop.

33. (Withdrawn) A multi-purpose device of Claim 26, wherein said capillary segment of (b) has walls with a surface hydrophilic to said sample.

34. (Withdrawn) A multi-purpose device of Claim 26, wherein said transfer passageway of (b) and said passageways of (d) and (e) have walls with a surface hydrophobic to said sample.

35. (Withdrawn) A multi-purpose device of Claim 33, wherein said capillary segment of (b) has hydrophilic walls adjusted to provide a substantially complete passage of said sample.

36. (Withdrawn) A multi-purpose device of Claim 34, wherein said passageways of (b), (d) and (e) have hydrophobic walls adjusted to prevent deposits from adhering to said walls.

37. (Withdrawn) A multi-purpose device of Claim 26, wherein said capillary passageways have a width of about 10 - 500 μm and a depth of at least 5 μm .

38. (Canceled).

39. (Currently Amended) A device of Claim 38 52 further comprising at least one second reagent well in liquid communication through a hydrophilic capillary passageway with said first reagent well.

40. (Previously Presented) A device of Claim 39 further comprising at least one third reagent well in liquid communication through a hydrophilic capillary passageway with at least one of said second reagent wells of Claim 39.

41. (Currently Amended) A device of Claim 38 52 wherein said first reagent well contains a reagent adapted to react with a component contained in said uniform liquid sample.

42. (Previously Presented) A device of Claim 41 wherein said first reagent well contains a reagent adapted to react with a component contained in said uniform liquid sample and thereby produce a response indicating the amount of said component in said liquid sample.

43. (Previously Presented) A device of Claim 41 wherein said first reagent well contains a reagent adapted to react with a component contained in said uniform liquid sample and thereby reduce interference of said component with a second component to be detected.

44. (Previously Presented) A device of Claim 41 wherein said first reagent well contains a reagent adapted to pretreat said liquid sample.

45. (Previously Presented) A device of Claim 42 wherein said first reagent well contains a reagent adapted to react with a component in said liquid sample and thereby produce a reacted component.

46. (Previously Presented) A device of Claim 45 wherein said reacted component is further reacted in a second reagent well to produce a response indicating the amount of said component in said liquid sample.

47. (Currently Amended) A device of Claim ~~38~~ 52 wherein the walls of said hydrophilic capillary passageway of (b) have a hydrophilic surface adjusted to provide substantially complete removal of said liquid sample.

48. (Currently Amended) A device of Claim ~~38~~ 52 further comprising electrodes disposed in said first reagent well for measuring properties of said sample fluid.

49. (Previously Presented) A device of Claim 39 further comprising electrodes disposed in at least one of said second reagent wells for measuring properties of said sample fluid.

50. (Previously Presented) A device of Claim 40 further comprising electrodes disposed in at least one of said third reagent wells for measuring properties of said sample fluid.

51. (New) A microfluidic device for dispensing and analyzing a uniform volume of a liquid sample comprising:

- (a) a sample well for receiving and transferring a portion of said liquid sample;
- (b) a hydrophilic capillary passageway in liquid communication with said sample well of (a) for receiving a portion of said sample from said sample well of (a), a segment of said hydrophilic capillary passageway disposed between two vents from said hydrophilic capillary passageway to the atmosphere, said segment defining said uniform volume of said liquid sample;
- (c) a transfer hydrophilic capillary passageway in liquid communication between said segment of said hydrophilic capillary passageway of (b) and a reagent well, said transfer hydrophilic capillary passageway entering said segment between said two vents to atmosphere, whereby when said uniform volume of said segment is transferred to said reagent well air enters said segment from said two vents and displaces said uniform of liquid sample.
- (d) A hydrophilic capillary stop disposed within said transfer hydrophilic capillary passageway of (c) between the entrance to said segment and said reagent well, said capillary stop for preventing transfer of said uniform sample volume until the resistance of said capillary stop is overcome by a means for applying force using pressure, vacuum, or electroosmosis.

52. (New) A microfluidic device for dispensing and analyzing a uniform volume of a liquid sample comprising:

- (a) a sample well for receiving and transferring a portion of said liquid sample;
- (b) a hydrophilic capillary passageway in liquid communication with said sample well of (a) for receiving a portion of said sample from said sample well of (a), a segment of said hydrophilic capillary passageway disposed between two vents from said hydrophilic capillary passageway to the atmosphere, said segment defining said uniform volume of said liquid sample;
- (c) a transfer hydrophilic capillary passageway in liquid communication between said segment of said hydrophilic capillary passageway of (b) and a reagent well, said transfer hydrophilic capillary passageway entering said segment between said two vents to atmosphere, whereby when said uniform volume of said segment is transferred to said reagent well air enters said segment from said two vents and displaces said uniform of liquid sample.
- (d) A hydrophobic capillary stop disposed within said transfer hydrophilic capillary passageway of (c) between the entrance to said segment and said reagent well, said capillary stop for preventing transfer of said uniform sample volume until the resistance of said capillary stop is overcome by a means for applying force using pressure, vacuum, or electroosmosis.